is the debt war over? introduction and summary

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In the mid-1990s, Canadian governments declared war on deficits. In a famous sound bite in his budget update of October 1994, then-federal Finance Minister Paul Martin declared that his government would hit its fiscal targets, which did not yet include a balanced budget, "come hell or high water." In 1997, ahead of the schedule outlined in his party's election manifesto, the federal government produced its first balanced budget in a generation, and the first in a series of a half dozen so far, with no end in sight. Provincial governments have not all been as successful as Ottawa in eliminating their deficits, but both public and professional opinion of deficits is now so thoroughly disapproving that it seems reasonable to talk in terms of the war against the deficit as having been won, convincingly.

As often happens in war, victory creates new problems. As deficits were vanquished in the late 1990s, the country faced the dilemma of "what to do with the surplus?" Leaving aside the logical difficulty that a surplus that is spent or used for tax reduction is no longer a surplus, there were three broad options. First, should the current excess of government revenues over government expenditures be spent on new programs? Second, should it be devoted to tax cuts? Or third, should it be devoted to a new fiscal war, this one aimed at reducing the country's debt, which, as this book goes to press in the winter of 2004, stands at $527 billion for the federal government and $786 billion for all levels of government (federal, provincial-territorial and municipal).[1]

Confronted with this three-pronged choice between tax cuts, new spending and debt reduction, Canadian governments, and especially the one in Ottawa, have answered, resoundingly, "yes!" At the federal level, the government has explicitly budgeted tax cuts and new spending and has treated debt reduction as a residual: if a special "contingency fund" is not needed in a year, then it will be devoted to debt reduction. In some years, all funds not explicitly budgeted have been used for debt reduction, of which there has been some $62 billion since 1997.

The question posed by this book and by the October 2002 conference on which it is based is, in effect, is that enough? Is the current rather modest pace of debt reduction – at the federal level a 10.5-percent decline from the peak in 1997, in the provinces just 3.8 percent from the peak in 1999 – enough? Or does more have to be done? To put things more dramatically, is the debt war over?

In answering this question, a number of subsidiary questions present themselves: How big is the debt? Where did it come from? (that is, what caused it?). What, if anything did we get for the debt? What are the costs of continuing to run such a large debt, and therefore what would be the benefits of reducing it? Can economics say anything about the optimal size of the debt? Is zero best? Or is some continuing debt desirable? And if we are to continue to have at least some government debt, what is the best way of managing it? Finally, do we need legislated "fiscal rules" in order to control either budget deficits or the level of debt? Although this seemed to us to be more than enough questions, you will see that one of our conference commentators (Jack Mintz of the C. D. Howe Institute) wished we had asked at least one more.

To answer each of the major questions we did pose, we brought together two distinguished Canadian economists, one to present a paper and one to provide a critique of the paper. The purpose of this introduction is to summarize the papers and commentaries and then to provide our own summary view on what this book says about whether the debt war either is or should be over.

How Big Is the Debt?

A first step in all this is to try to determine just how much Canadian governments owe. Of course, if a government's net liabilities are offset by equally large expected receipts then even a very large debt might not warrant a continued war. So what we are really interested in is the government's *net worth*: how much it owes, how much is it owed and whether the difference between the two is manageable.

To address this problem, we called on *William Robson*, senior vice-president at the C. D. Howe Institute in Toronto, who for some time has been interested in the problems posed by government debt. His paper is an impressively comprehensive

discussion of how best, when estimating governments' net worth, to count the many different kinds of activities in which modern governments are involved.

Robson begins by asking the basic question why we might be concerned about the government's net worth. He proposes three answers and then goes on to provide an estimate of Canadian governments' net worth customized to answer each question.

Government net worth is an indicator of short-term liquidity. A government might fail to make its debt payments in full or on time and such a liquidity crisis could lead to financial instability. This was a clear possibility in some Canadian capitals during the Mexican peso crisis in 1994.

Government net worth is an indicator of longer-term solvency. A government may be in good financial shape today but, if no existing policy is changed, it may face a serious deterioration in its financial position in future. This concern comes from the government's failure to take proper account of the longer-term sustainability of its spending and tax polices. It points toward a calculation of net worth that tries to include as many future spending obligations and sources of revenue as possible, even if some such obligations are moral and implicit rather than legal and explicit.

Government net worth affects private sector behaviour. Changes in the government's balance sheet may affect behaviour outside the public sector and then feed back onto the public finances. These feedback effects should be reflected in any calculation of the government's net worth. (In the end, Robson does not attempt the very difficult task of producing a separate balance sheet incorporating such considerations but instead confines himself to describing possible feedback effects that would have to be taken into account if such an exercise were attempted.)

Viewed from these three perspectives, how do Canada's public debts stack up? On the first criterion, the possibility that our governments will default at any early date, the answer is: not at all badly. Before coming to this conclusion, Robson makes a number of small adjustments from valuation methods used in the official public accounts. These involve: foreign-exchange reserves, holdings of equity in Crown corporations, the carrying value of loans and securities, the net financial assets of workers' compensation boards and deposit-insurance corporations, federal pre-bookings of spending programs, the valuation of physical assets, coins, marketable debt, and, finally, deferred compensation. On balance, these changes actually make Canadian government's financial position look better than

it appears in the official accounts. As of March 2000, the latest date for which complete data were available when our conference was held, Robson estimates, "net government obligations that matter for near-term liquidity amounted to some $760 billion … about $70 billion less than the total reported" in the government's own Financial Management System. Although "this is still a sizeable amount, equal to 71 percent of 2000 GDP … historical valuations along these lines would have yielded a pronounced decline in this ratio from its position four years earlier, and an update to 31 March 2002 would show it around 10 percentage points lower yet." Robson concludes that "from the point of view of credit-market participants, this was a decisive improvement in Canada's liquidity situation," an improvement reflected in the credit agencies' decision to return Canada to triple-A status. How big a deterioration in this position would be required to raise concerns of the sort that were common in the mid-1990s? Robson argues that as of October 2002 a 25-percentage-point increase in the debt-to-GDP ratio would probably cause problems, but "with GDP of about $1.2 trillion, this would amount to an increase in net liquidity-oriented obligations of some $420 billion – not a possibility that, given the current fiscal stance of Canadian governments, is likely to concern credit-market participants."

Turning to his longer-term analysis, Robson notes that many government obligations that loom large over the next few decades are more moral than legal. Unless the courts extend their discretion over social policy even further than they have to date, it is within the power of Parliament and the provincial legislatures to alter the terms under which they deliver education, health care and other social services. Still, many Canadians assume their governments are committed to continue to provide public services at least as good as today's and may make their personal plans on that basis. So it is useful to try to estimate the financial implications of running public services at a given level of quality into the future. Of course, part of this implicit contract with government is that Canadians expect to continue to pay taxes in order to finance these public services, so any reasonable estimate also needs to take into account the future inflow of revenues. The approach Robson adopts is to assume that Canadians expect to pay the same share of their income in taxes as they currently do. He therefore counts as an unfunded liability (i.e., government debt) any expenditure that would require taxes to rise as a share of GDP. This does not mean such expenditures would remain literally unfunded: governments may eventually decide to raise taxes in order to fund them. But as things currently stand, with the amount of GDP growth that it is reasonable to expect and with taxes held constant as a share of GDP, there would not be enough money to fund them.

Among the spending programs whose future funding requirements Robson estimates are: the Child Tax Benefit; primary, secondary and postsecondary edu-

cation; medicare; the Canada and Quebec Pension Plans; deposit insurance; workers' compensation; and the Old Age Security/Guaranteed Income Supplement program. On the asset side, governments can expect to pick up more revenue in future as taxes which for the moment have been deferred – in Registered Retirement Savings Plans – for instance, come due. In each case, he looks out 50 years, figures out the unfunded liability (or asset) in each future year, and then computes its present (or "capitalized") value using a discount rate of 6 percent.

Robson's long-term assessment of Canadian governments' net worth is not as encouraging as his short-term assessment. Canada's governments have large unfunded liabilities. The current capital value of their total unfunded liabilities, both long term and short, is $1.1 trillion, or 107 percent of 2002 GDP. If economic growth does not proceed more quickly than the 3.9 percent Robson assumes, taxes will have to rise as a share of GDP to keep spending programs at their current per capita levels.

Robson makes a clear distinction between the federal and provincial governments. As he explains, "Ottawa can look forward to large amounts of deferred taxes, while the projected reductions in the share of GDP required to finance the Child Benefit and Ottawa's relatively modest support for postsecondary students largely offset its exposure to the OAS/GIS system. The bottom line – a net liability of about $355 billion – is better than that shown by conventional measures." In other words, Robson's calculation of the federal government's total debt is actually *less* than the numbers we usually see. Things are not as promising for the provincial governments, however. As a group, they too can look forward to the payment of deferred taxes and they can expect sizeable inflows from their nonfinancial assets, as well as a demographic bonus as the number of school-age Canadians declines. But all this is swamped by healthcare expenditures, which skyrocket as the population continues to age. In sum, total unfunded provincial liabilities are $360 billion, about 40 percent higher than the numbers we usually see. Adding the municipalities' very substantial physical assets to the provincial balance – the municipalities are "creatures of the provinces," after all – does not alter the now-common view that the federation is suffering a fiscal imbalance.

Robson argues that because of this imbalance Ottawa should not spend its current surpluses, as it obviously is tempted to do, but neither should it hand them over to the provinces in transfers: that would create tens more billions of dollars of public spending for which accountability was unclear. Rather, Ottawa should consider ceding tax room to the provinces, lowering federal tax rates and thereby enabling provinces to raise theirs.

Robson's third balance sheet, which in fact he does not calculate, is what he calls the "nongovernmental-behaviour-oriented" balance sheet. Here he is con-

cerned with the effects that unfunded liabilities and the policy changes they may eventually lead to will have on the evolution of the Canadian economy. What he seems to be seeking is nothing less than a comprehensive cost-benefit calculus for the entire public sector. Some public assets that are currently unfunded may lead to increased private-sector incomes, and thus higher tax revenues, so that the assets will end up being self-funding. On the other hand, the higher taxes that may eventually be required to fund other assets may lead households and firms to change their behaviour in order to avoid the taxes, thus reducing government tax revenues. As David Johnson shows in a later paper, there has been some work on how the existence of public debt does or does not change private sector behaviour, but to our knowledge no study has yet used Robson's second balance sheet in assessing these affects, let alone his third.

In closing, Robson argues that the effects of our governments' unfunded liabilities on Canada's international competitiveness need to be examined carefully. Research from the Organisation for Economic Co-operation and Development (OECD) shows that Canada is not alone in having significant unfunded liabilities in its social programs. On the other hand, "Canada's position is relatively poor by comparison to several countries that might be considered our close competitors for migration and investment: the United States, Australia, and the United Kingdom." This leads Robson to conclude, in answer to the question that defines the conference, that "the debt war must continue if Canada hopes to maintain or improve its attractiveness as a place to work and invest."

In his comments on Robson's paper, *Stephen Ambler* of the Université du Québec à Montréal says that although he would have preferred to see more "sensitivity analysis" of the expenditure and revenue projections, that is, more simulations using different assumptions about discount and growth rates, he essentially agrees with Robson's conclusions, both about the short-term unlikelihood of a cash crisis and about the more serious nature of our long-term predicament. Robson's bottom line is that as of October 2002 combined Canadian government (federal plus provincial plus municipal) liabilities were $308 billion higher than conventional measures suggest. Applying a discount rate of 2.1 percent (Robson's rate of 6 percent minus expected nominal GDP growth of 3.9 percent) gives an annual debt service cost of $6.47 billion, or 0.59 percent of 2001 GDP. Although that is a large number in absolute dollars it is not so big in relation to GDP.

Ambler provides two reasons why we should not be complacent about this number, however. First, it is not the same across all Canadian jurisdictions: "some provinces would have to raise much more then 0.59 percent of their gross provincial product in order to meet their implicit future liabilities." Second, "for the problem to remain small it must be faced immediately." Robson's calculations assume there will be no new spending beyond 2001 levels. By contrast, Ambler argues that

politicians wanting to leave legacies seem intent on driving down the surplus, in which case their real legacy may be "higher taxes for our children."

Where Did the Debt Come From?

Santayana wasn't necessarily right: knowing history does not necessarily mean not repeating it. Even people who have taken the time to learn about the past can fall captive to syndromes with an ancient ancestry: consider the Middle East or Northern Ireland. Exactly where Canada's debt came from is a more innocuous question but it is interesting in and of itself and there is at least the possibility that studying it may illuminate pitfalls that can be avoided in future. To take on this retrospection, we asked *Ronald Kneebone*, professor of economics at the University of Calgary, and *Jennifer Chung*, a University of Calgary graduate student in economics, to extend work they have been involved in for some time.

At first blush, "Where did the debt come from?" may seem a simple-minded question. Surely the debt came from Canada's governments running deficits: over the years they spent more than they taxed. That much is definitional. But behind the definitions what sorts of forces were at work? A political scientist might talk about changes in public opinion, institutional influences on how governments make budgetary decisions, and so on. Kneebone and Chung are economists and instead focus on three forces that can be quantified, and to which they aim to attach hard numbers. The three components that explain changes in the debt-to-GDP ratio are:

> *The structural component*. Changes in the debt-to-GDP ratio caused by the government's decision to change its level of spending or taxation (not including interest payments on the debt).
>
> *The cyclical component*. Changes in the debt-to-GDP ratio caused by the effect that changes in the level of economic activity have on the government's spending and tax revenues
>
> *The rate component*. Changes in the debt-to-GDP ratio caused by changes in the interest rate that must be paid to service the existing stock of government debt, relative to the rate of growth of GDP.

Let's take these three components one at a time. On the first, the structural component, as government consciously decides to spend or tax more or less there will be an obvious effect on its budget deficit and thus on the path of the debt-to-GDP ratio. An increase in spending or a reduction in taxes will tend to

increase the deficit; a reduction in spending or an increase in taxes will tend to reduce it. The structural component excludes interest payments, thus allowing a focus on that part of government expenditures over which the government really does have discretion. Excluding interest payments gives us the government's *primary balance*. And because this discretionary component is calculated as any change in the government's primary balance as it would be if the economy were operating at capacity, we therefore refer to the *structural* primary balance. Changes in the discretionary component are thus completely removed from swings in economic activity and are therefore the "purest" possible measure of changes in the stance of fiscal policy.

By contrast, the cyclical component is beyond the control of current government policy. Even if the government makes no changes in its spending or taxation plans, fluctuations in the level of economic activity will alter both its deficit and the debt-to-GDP ratio. An increase in activity will normally cause the deficit to decline: less has to be spent on employment insurance and similar items while income taxes on corporations and individuals bring in more revenue. An economic slowdown will automatically increase spending on the unemployed and reduce tax revenues, so the deficit and debt-to-GDP ratio will rise. Algebraically, this second component is equal to the difference between the *actual* primary balance and the *structural* primary balance, and it emerges only when the level of economic activity deviates from the economy's capacity.

The third component of the budgetary balance, the "rate effect," is also outside government's short-term discretion: neither market interest rates nor GDP growth rates are within the control of the fiscal authority. If the government is already in debt, any rise in interest rates will tend to increase the interest cost of servicing this debt, especially the part of government debt that is short term and so gets rolled over frequently. Thus, a rise in the interest rate tends to increase the debt-to-GDP ratio. In contrast, an increase in the growth rate of GDP means that the denominator of the debt-to-GDP ratio is growing faster, and thus the ratio itself tends to fall.

It is tempting to think of the second and third components as somehow not being the government's fault, because they are not discretionary. But in the longer run everything is discretionary. Over time, a government can respond to the effects of economic fluctuations on its revenues and spending by altering the fiscal rules. Or it can offset the unfavourable effects of higher interest rates on its existing debt by reducing the amount of debt it is carrying. Where short periods are concerned, however, it may be useful to think of the first component as discretionary and the second and third as being, for want of a better term, "automatic."

In their paper, Kneebone and Chung estimate these three separate components in the evolution of federal and provincial government debt for every year

dating back to 1970, just before the start of the big debt buildup in the mid-1970s. Calculating the effect of interest rate changes on the existing debt is straightforward enough, but trying to estimate the structural deficit or surplus – what the budgetary balance would have been had the economy been at capacity instead of where it actually was – is trickier. "Capacity output," which is sometimes called "potential output" or "full-employment output," cannot be observed directly and so must be estimated. But this makes it controversial, especially since it very likely changes over time as demographic patterns and government policies change. In the end, the statistical methods that Kneebone and Chung use provide estimates of the economy's capacity that fall within the bounds normally used by the profession.

Armed with estimates of capacity output in each year, Kneebone and Chung then calculate how different spending programs and taxes respond to changes in output and use these estimates to calculate the structural primary balance, what the deficit would have been at capacity output. That in turn allows them to figure out how much of the actual deficit is a result of deficient economic output and how much a result of discretionary spending and tax decisions.

A crucial aspect of the analysis, it turns out, is that these three components of debt accumulation – the structural, cyclical and rate components – can be offsetting. Although a government may be increasing its structural deficit this may not show up in the public accounts either because the economy is at the top of a business cycle (so that tax revenues are buoyant and employment insurance expenditures declining) or because interest rates have been falling or GDP growth rates rising. In fact, Kneebone and Chung argue that this is precisely what happened to the federal government in the 1970s. In the early years of that decade, Ottawa undertook large-scale public expenditures in an ultimately misguided attempt to fight stagflation. It then compounded its problems mid-decade by indexing the personal income-tax system against inflation and introducing a number of new tax expenditures. The combined effect of higher structural spending and lower structural tax revenues was a higher structural deficit that should have set off alarm bells. But in fact the actual deficit and debt increased only modestly, at least as a share of GDP. The reason was that real interest rates were low in comparison to the relatively high rate of economic growth. The rate effect outweighed the structural effect.

Kneebone and Chung conclude that the structural deficits Ottawa incurred in the early and mid-1970s proved to be very expensive. Fooled by the offsetting decline in the rate component, policy makers seemed to conclude from the decade's experience that even very unfavourable economic circumstances – two OPEC shocks and a flirtation with out-of-control inflation – could not create a long-run budgetary problem. It was only in the early 1980s, after a sharp interest

rate spike and a consequent recession turned both the cyclical and rate components unfavourable that the true seriousness of the structural problem became evident. Following its election in 1984, the Mulroney government began to reduce what by then had become a large structural deficit. This it did both by raising taxes and by holding structural spending constant as a share of GDP, thus allowing the growth of GDP to reduce the debt-to-GDP ratio. Although the recorded deficit remained stubbornly high, the primary deficit was eliminated by 1990: for the first time since the 1970s tax revenues now covered program (i.e., non-interest) spending.

Just as the primary deficit disappeared, however, the cyclical and rate components produced very large deficit numbers – $45 billion is the commonly quoted figure – that finally created the political consensus which allowed a new government to begin reducing its structural deficit, which Jean Chrétien's Liberals did, very rapidly, from 1994 on. As of 2001, when Kneebone and Chung's analysis ends, the rate component had stopped contributing to increases in the debt ratio, which means that recent declines in the federal government's debt-to-GDP ratio have been due solely to the large structural surpluses Ottawa has been running.

What is the bottom line of this analysis? According to Kneebone and Chung, between 1970 and 1997 Ottawa accumulated $564 billion of new debt, fully three-quarters of the new debt built up by Canada's governments. Of this amount, $432 billion (or 77 percent) was accumulated as a result of a mismatch between structural expenditures and structural revenues; $12 billion (2 percent) was the result of the business cycle and $120 billion (21 percent) was due to the difference between the interest rate and the economy's growth rate. Although the structural component was clearly dominant, the rate component played a crucial role in the 1970s, when it camouflaged the emergence of a large structural deficit. After 1975, policy makers took almost 15 years to close the structural deficit that had been incurred fighting post-1970 stagflation and then another seven years in the 1990s to create a structural surplus large enough to offset interest payments, bring the recorded budget into balance, and pay down at least some federal debt.

Canada's provincial governments also contributed to the accumulation of public debt in the period 1970–97, though not nearly as much as Ottawa. As we have seen, the federal government was responsible for 75 percent of the increase in public debt over this period. Another 11 percent was due to Ontario, 9 percent to Quebec, and just 4 percent to the eight other provinces combined. To a certain extent, Ontario and Quebec suffered the same syndrome as Ottawa. In the 1970s, low interest rates and relatively high rates of economic growth obscured structural deficits. When the rate component turned sour (in 1982 for Quebec, though only in 1990 for Ontario) actual deficits began to rise. Ontario

took action against its problem early on and in fact by 1980 had substantially reduced its structural deficit. Over the next decade it gradually eliminated its structural deficit but then in the *annus horribilis* of fiscal year 1991 all three components turned unfavourable. Even so, the structural deficit had been eliminated by the time the Harris government took office in 1995 and subsequent spending and tax cuts kept the primary budget in balance. In Quebec, by contrast, spending cuts did not begin in a serious way until the mid-1990s. Even so, the province was able to achieve a structural surplus by 1996.

In his comments on Ron Kneebone and Jennifer Chung's paper, Université de Laval economist *Marc Van Audenrode* congratulates them on their development of a methodology that allows a break-down of the various sources of the debt. But then he takes them to task, albeit gently, for not going the extra step and being more explicit about which particular policies created such a large debt problem for Canadian governments after the 1970s. Unfortunately, he argues, the technique they use is not well suited to this task. There are two main problems with it. The first is that the analysis depends on making a clear distinction between what is structural and what is cyclical, and this is much easier after the fact than before. For example, in hindsight, it seems clear that policy makers in the 1970s did let the structural deficit get out of hand. At the time, however, it was widely thought that the economic slowdown known as stagflation was temporary and that the deficits of the day were therefore mainly cyclical in nature. We now know they were not. But should we really blame the policy makers of that time for not recognizing that fact quickly enough?

Van Audenrode argues that the second main problem with Kneebone and Chung's technique is that it is essentially an accounting exercise. As such, it does not attempt to model the interaction between cyclical and structural deficits, on the one hand, and the level of interest rates and the rate of growth of the economy, on the other. "Yes," he says, "the very lax fiscal policies of the early 1970s helped create a large structural deficit. But they also clearly helped sustain economic activity, which most likely made the cyclical component of the deficit much more favourable." His conclusion is that although Kneebone and Chung are very good on the mechanics of the debt's evolution, "more work is needed if we are to understand the links between these mechanics and policies."

What Do We Get for the Public Debt?

Debt is not necessarily bad. When private firms borrow they use the money to acquire assets. Unless they are Enron or Worldcom, the debit side of their balance sheet will be offset by physical or other assets. It is only natural to apply the same thinking to the public sector. Canada's governments may be very

indebted, but if they have gone into debt to acquire genuinely useful assets, then maybe their decision to incur debt was a wise one.

To answer this question of "What do we get for the public debt?" we called on Queen's University's *Robin Boadway*, one of the world's leading experts in public finance and someone known for not being unsympathetic to government efforts, to solve social and economic problems. Boadway immediately rewrote the rules on us and changed his assignment. He wanted to answer the slightly different question "What do we get for public indebtedness?" What's the difference? Let's follow his line of thought.

Public debt, as we have seen, is the contracted debt of the public sector. Boadway begins his paper by arguing that some kinds of public debt probably do not cause anyone much concern. For instance, if a government's revenues jump around from month to month or quarter to quarter, as they normally will, it does not make sense for it either to move its tax rates up and down to steady the inflow or to vary its public expenditures to match the fluctuations in its revenues. What it can do instead is borrow in periods when tax revenues are less than spending and pay back these loans when revenues exceed spending. The reason this sort of borrowing is ethically unobjectionable to most observers is that the people who benefit from the borrowing when there is a deficit are pretty much the same people who pay the loans back when there is a surplus. The same is true of borrowing and payback that balances over the slightly longer period of a business cycle. If the cycle is short enough, the same people pay back the loan as benefited from it.

Where borrowing may be more dubious ethically is when it involves an "intergenerational transfer." This occurs when most of the people who did the borrowing are *not* around to pay back the loan. In such cases, later generations are left holding the bag for earlier generations' spending. Boadway argues that this is a principal difference between public debt and private debt. In the private sector, as mentioned above, firms acquire assets in exchange for their debt. They get buildings or machines or know-how or goodwill. In the public sector, borrowing may lead to the accumulation of assets, some tangible, some not. But borrowing is also likely to involve an intergenerational transfer: the current generation will use the proceeds of the loan to buy now, while a future generation will be asked to repay the loan. Much of the current concern about government debt arises out of fear that today's taxpayers may be leaving an unfair fiscal legacy to their children.

Boadway's central point is that although the public sector debt that shows up in the public or national accounts may involve this sort of intergenerational transfer, incurring official public debt is not the only way the current generation can impose a cost on future generations. In fact, there are many ways it can do so.

One is by running a pay-as-you-go pension plan, like the Canada Pension Plan, in which the pensions of today's (old) retirees are paid by taxes on the earnings of (young) workers. It is true that today's retirees may have paid taxes to finance the pensions of the last generation's retirees, and perhaps turnabout is fair play, but that does not alter the fact that what is currently taking place is a transfer of purchasing power from today's younger generation to today's older generation. And it is usually the case that the first generation to retire after such a pension plan is established benefits by substantially more than it contributes to the plan. Indeed, as Boadway suggests, that may have been the very purpose of many such public pension plans, which were introduced at a time when many retirees had lost their savings to the Great Depression and to service in World War II.

Because many public policies can give rise to this kind of intergenerational transfer of resources focusing only on the transfer effected by formal government debt is misleading. Other things being equal, a long-lasting increase in public debt will shift the burden of financing public activities from today's taxpayers ("the old") to future taxpayers ("the young"). But other things may not be equal. If other public policies are hitting "the old" more than they are hitting "the young," then strong action to reduce the debt may in fact place an unfair burden on today's taxpayers.

Use of the word "unfair" makes clear that we have now entered the realm of ethics, or, as economists prefer to call it, "normative economics." That is inevitable as soon as we start talking about taking from one generation (or individual) and giving to another. How do we go about deciding whether a given array of public policies, including debt policy, is "fair"? First, Boadway argues, we need a lot of factual information, not just about public debt, but about "public indebtedness," a term he uses to indicate just how much the entire spectrum of public policies transfers tax obligations from the current to future generations. In particular, we need to know how both the tax burden and the benefits of public expenditures break down by age group. The professional term for gathering such information is "generational accounting," and a good deal of it has been done in the last 15 years.

Boadway argues that although existing Canadian studies suffer from a number of conceptually important deficiencies their results are intriguing nevertheless. One key finding is that the average tax rate over the lifetime of those age cohorts currently alive has evolved relatively smoothly over time. This suggests that, in the face of the very significant shocks, including the Great Depression and World War II, experienced by many of those still living, governments must have been smoothing the tax burden across generations. This work also places the importance of the current debate about what to do with the surplus into stark relief. As Boadway says when summarizing this body of work: "When

budget surpluses are used to reduce the debt, the lifetime net tax rate for future generations is virtually the same as for the current young, about 38 percent. This is despite the coming demographic shock in which the proportion of the population over 65 is projected to increase dramatically. On the other hand, if the budget surpluses were used to increase government expenditures, the lifetime net tax rate for future generations would rise to 55 percent, substantially higher than that of the current young." Thus Boadway appears to support current debt repayment on the grounds of intergenerational equity.

When we have figured out the impact of the current fiscal stance on all future generations, which is itself no mean feat, we then have to figure out whether the distribution of burdens and benefits that would result from changing that stance would be fair. To that end, we need some ethical precepts. Boadway offers up a few, drawn from standard economic theory. Among them are:

> *The Pareto principle*. If a change makes no one worse off and at least one person better off, it is a good thing;
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> *Inequality aversion*. Other things being equal, people prefer less inequality in the income distribution than more;
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> *Compensation and responsibility*. People should be compensated only for misfortunes that are not their own doing; and
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> *Social insurance*. When individuals or generations cannot insure themselves against certain kinds of shocks, the state may decide to step in and provide the insurance in question.

What sorts of policies follow from these general precepts? If we do favour equality, then we may approve policies that take resources from richer generations and transfer them to poorer ones. If the march of technological progress means that later generations usually are richer than earlier generations, then, within limits, policies that take from later generations, as public indebtedness certainly does, may be unobjectionable. If a particular generation suffers a serious setback to its earnings for reasons beyond its control, then policies that move money to it may also be unobjectionable. Of course, an obvious practical difficulty with this idea is that although it is easier to decide whether a generation is deserving of help using the benefit of hindsight, policy decisions have to be made before the fact, while the generation is young or middle-aged.

At our urging, Robin Boadway agreed to extend an earlier draft of this paper by adding what he calls "speculative" comments to try to assess how the public debt

policy of the last 30 years might fit into such an ethical framework. Have the debts accumulated over the last three decades created an unfair burden for future generations of Canadian taxpayers? Boadway's view is "maybe not." The debt buildup of the 1970s and 1980s may not have been unfair, given the circumstances of the time, while the rapid reduction of the debt beginning in the mid-1990s may well have placed too much of the burden on contemporary taxpayers. If anything, future taxpayers should be paying more taxes than they are. We are sure that Boadway himself would be the first to stress that without all the missing information he inventories in his article any such judgement can only be preliminary. Still, we are grateful to him for putting such a judgement on the table to be debated.

In his comments, the Department of Finance's *Jeremy Rudin* argues that the logic of Boadway's analytical framework is "inescapable." However much we might prefer otherwise, we cannot assess the fairness of one kind of policy-mandated intergenerational transfer without knowing about all the other policy-mandated intergenerational transfers currently taking place. The different transfers underway all net out and what is relevant for ethical judgements is this net transfer from one generation to another. Until all the information is in, information about the transfer implied by the growth or reduction of formal government debt is not that useful.

Does that mean nothing can be said until full-blown generational accounting is commonplace – a decision that would make life very difficult for people like Rudin and his colleagues at the Department of Finance, who have to make policy? Rudin argues that there may be special cases in which it is possible to make reasonably strong conclusions about fairness. There may be times – the Mexican peso crisis in the fall of 1994, for instance – when intergenerational transfers will pay off for *all* generations. Foreign holders of Canadian government bonds were not overly concerned with the intricacies of intergenerational fairness as they watched the collapse of the peso and worried about a possible collapse of the Canadian dollar. Their concerns caused them to demand a risk premium from Canadian borrowers, both public and private, that, had nothing been done, would have imposed significant economic costs on current Canadian taxpayers. Avoiding these costs, Rudin suggests, may well have been a good deal even for those who had to assume the burden of immediate tax increases and spending cuts to ensure that the federal deficit and debt were brought under control.

That point addresses the second of Robin Boadway's speculative conclusions, namely, that the debt reduction of the second half of the 1990s was too rapid. But what about his first conclusion, that the debt buildup from the mid-1970s to the mid-1990s may not have been unreasonable? That depends on questions

like: How bad *were* the recessions of 1980–82 and 1990–91? How severe *was* the dislocation from the FTA and NAFTA? To what extent *should* successor generations be asked to pay for disappointed expectations about productivity growth? And what sorts of legacy were taxpayers of 1975–95 leaving in the other policy areas where intergenerational transfers are likely? If they were also despoiling the environment, running the Canada Pension Plan into unsustainability, eating up natural resources and shifting the tax structure away from themselves, it would have been a bit much for them to ask successor generations to assume the additional burden of helping them through what were in fact relatively mild economic shocks compared to the worldwide depression and war through which their parents lived. And just how well off are these successor generations likely to be? They may reasonably expect to enjoy more-rapid productivity growth and therefore a faster-growing standard of living than their immediate predecessors. On the other hand, they now have to live with the scourge of terrorism. Rudin's warning that the analysis of "well-being is fraught with difficulty" is obviously well taken. Moreover, we doubt Robin Boadway would disagree with any of these points. But he almost certainly would argue that they are the kind of thing that must be taken into consideration in deciding whether a given intergenerational transfer is fair.

Does Government Debt Matter?

Having seen how big the debt is and having spent some time on the questions of where it came from and what we got for it, a natural next question is "What does the debt cost us?" That implies it does cost something, as most people probably would expect. But in fact a logically prior question is whether the debt matters at all.

A question so existential might not occur to politicians, policy makers or taxpayers. How could the accumulation of almost a trillion dollars of Canadian government debt over the last quarter of the twentieth century not have mattered? But it is a question economists have been arguing about for almost two centuries. The idea that the debt might *not* matter even has its own name, *Ricardian equivalence*, after the great English economist, David Ricardo (1772–1823), who argued during the Napoleonic Wars that whether governments financed their spending by taxes or by borrowing might not actually make much difference. Governments might *wish* to make a difference by choosing one method of finance over the other, but people could respond to the state's decision by changing their behaviour in ways that frustrated its intentions. If the offset were perfect, the size of government would still matter, but how it had gone about financing itself, whether with taxes or debt, would not.

Ricardian equivalence, or RE for short, has been hotly debated in economics since an influential article by Harvard University's Robert Barro brought it back into the intellectual spotlight in 1974, at just about the time Canadian government debt was beginning its long, late-century rise. Although some economists regard RE as an interesting intellectual curiosum, with little relevance to the real world, others see it as having considerable practical importance. To try to tell us whether Canadian governments should worry about the tax-or-borrow choice, we called on *David Johnson* of Wilfrid Laurier University, who has been thinking and writing about this issue for several years. His paper explains Ricardian equivalence and assesses the current evidence on whether or not it applies in Canada.

Johnson begins by explaining how Ricardian equivalence might hold in a closed economy, that is, an economy that neither trades with, borrows from, nor lends to other countries. No economy in the world, not even North Korea's, is truly closed, but in economic theory the case of a closed economy is a useful benchmark. Later, Johnson opens up his model economy to see how RE operates when trade and capital flows are permitted, as they obviously are in Canada.

In a closed economy, the total amount of goods and services produced in any year, the nation's GDP, can be used in one of three ways. Output can be *consumed* for current purposes, and economists usually think of "households" as doing this consumption. It can be used for *investment* in capital equipment, an act economists usually ascribe to firms. Or, finally, output can be used by *government* to provide goods and services for citizens. In a closed economy there is no other use for a nation's output. This gives rise to one of the first accounting identities undergraduate students in economics see:

$$Y = C + I + G$$

where Y is the value of GDP, C the value of consumption expenditure, I the value of investment in physical capital, and G the value of government purchases of goods and services. This equation makes clear that, for any given level of GDP, if one of the components increases, at least one of the other two must decrease. For example, if consumption increases while the level of government spending is held constant, there must be a decline in the level of investment.

Ricardian equivalence is the idea that the method of government finance, taxes or debt, does not matter for the economy. That raises the Clintonesque question, what does "matter" mean? Economists agree that in this case "matter" means altering the combination of consumption, investment and/or government expenditure from what otherwise would have been observed.

How could the government's decision to run a bigger deficit *not* affect households' consumption? If taxes are lower, won't households spend at least some of

the increase in their after-tax income? Maybe they will, maybe they won't. Economists like to believe people think about the future when they make decisions. After all, families save for their retirement and for their children's education, while firms make investments that will pay off only in the distant future. Most people probably have at least a rough idea of how much income they will make in their working lives and how much they should therefore consume from year to year. Such forward-looking firms and households ought to recognize that today's tax reduction must somehow be matched by a future increase in taxes: if a government issues new debt today, sometime in the future it is going to have to raise taxes in order to pay the debt back. But if government borrowing merely means that people's current taxes fall and their future taxes rise, then their *lifetime* disposable income does not really change. So why should people change their consumption? In this case, forward-looking households and firms may gladly buy the new government bonds, but they will not alter their pattern of consumption and investment. In effect, they will save the entire tax cut implied by the government's decision to finance its spending by borrowing. This is the case in which RE holds completely and the government's method of financing has no impact on the economy. Government debt simply does not matter.

It is possible, however, that some households may not respond in this way but will instead spend at least part of the tax cut. They may not recognize the future tax obligations that the government's current borrowing implies. Or they may recognize it but not really care, maybe because they think the higher taxes will arrive only after they are gone. Or perhaps they believe that today's tax reductions will be matched by future reductions in government spending so that taxes really need not rise in the future. Or, finally, they may be "liquidity-constrained": they may wish to be consuming much more than their current income permits them to, but they are not able to borrow against their (much larger) future income. Many students are probably in this situation.

If for any or all of these reasons households do not fully recognize the future tax obligations that government borrowing implies, tax reductions will make them feel as if their lifetime income *has* gone up, and they may therefore increase their consumption. But if in our basic equation C goes up while G is constant, then I must fall. How would the reduction in investment actually come about? As the government enters the capital market to increase its borrowing, its demand for financial capital drives up interest rates, and the higher cost of capital then reduces the amount of investment firms are prepared to undertake. Thus, when Ricardian equivalence does *not* hold the government deficit "crowds out" private investment. The cost for the economy is a slower rate of capital accumulation and thus a lower rate of income growth in the future. By contrast, when RE *does* hold the increase in government borrowing does not increase interest rates. Why not? Because for every

dollar of new government debt there is a new dollar of household saving. The increase in the demand for loans is perfectly offset by an increase in their supply.

That brings Johnson to the payoff question: "Does Ricardian equivalence actually hold?" Testing economic propositions with real-world data is always tricky. In a theoretical model, one variable can be changed at a time. In the real world, lots of things are changing all the time, and governments seldom, if ever, make the simple taxes-to-bonds switch envisioned in theory. Rather, they increase or decrease government spending at the same time as they make a financing choice to cover the change. Johnson reports that the various ways in which RE has been tested give rise to different and often conflicting results. On balance, however, he concludes that the more carefully done studies have tended to refute RE. It seems that at least some people *do* increase their spending when faced with a tax cut. In general, between 30 and 50 percent of a tax cut is consumed so that government borrowing will indeed crowd out private investment. Johnson concludes that Ricardian equivalence does not hold and government debt therefore matters (and this book and the conference it was based on are saved from complete irrelevance!).

That is the closed economy story. How does the story change in the more realistic case in which a country can both trade with its neighbours and borrow and lend in world capital markets? In some ways, not very much. The worry is still that a reduction in taxes and an associated increase in government borrowing will lead to an increase in domestic consumption and an eventual reduction in the growth rate of income. But the mechanism through which this reduction occurs is different in an open economy.

In an open economy, especially one with very mobile financial capital, domestic interest rates move in tandem with those in the rest of the world. Given Canada's small size in the world economy, budget deficits by Canadian governments have a negligible effect on either world interest rates or, therefore, on domestic investment, which depends on the interest rate associated with financing it. If government debt does not change interest rates, it does not crowd out investment.

How then might budget deficits matter in an open economy? If Ricardian equivalence does *not* hold, then the government budget deficit will lead to an increase in domestic consumption. But with domestic households saving less, who finances the bigger government debt and the unchanged level of domestic investment? Foreigners do. The increase in government borrowing, which in a closed economy would drive up the domestic interest rate, now simply attracts foreign financial capital. In effect, the government deficit is financed by foreign lenders.

Because the government deficit has no effect on the level of investment it also has no effect on amount of output produced in Canada. But it does reduce

the amount of made-in-Canada output that Canadians get to keep. Some of our output must now be sent abroad to service our now greater foreign debts. In an open economy the problem with government debt is not its effect on the value of gross *domestic* product – the amount of output produced within our borders – but rather on the value of gross *national* product – the amount of our output that we actually get to keep as income.

Johnson's central test of the Ricardian equivalence proposition for an open economy is to look at the relationship between government budget deficits and the country's net foreign borrowing, which is equal to the country's *current account deficit*. This is the "twin deficits" problem that was much discussed in the United States when the Reagan budget deficits of the early 1980s contributed to rising foreign debt in that country. Johnson presents compelling evidence that the run-up in Canadian government deficits in the 1970s, but especially in the 1980s, coincided with a rise in Canada's international indebtedness. Nor is it coincidental, he argues, that since our governments began reducing their deficits in the mid-1990s the country's net borrowing from abroad has noticeably declined.

If Johnson is right, if Ricardian equivalence does not hold and if the deficits incurred by Canadian governments between 1976 and 1995 did indeed erode Canada's international capital balance, how great was the damage? How large has been the reduction in future Canadian income resulting from the greater reliance on foreign borrowing? Making use of his earlier estimate that consumption increases by between 30 and 50 percent of the government deficit, Johnson argues that the cost will have been between 3 and 10 percent of GDP. That may not sound like much, but it translates into $3,600 of yearly income, each and every year into the future, for an average family of four, an amount that in his (and likely their) view is substantial.

In his comments on David Johnson's paper, University of Ottawa's *Serge Coulombe* is not quite so hard on Ricardian equivalence. He agrees with Johnson that RE does not hold *completely*; consumers do not fully offset the government's issue of debt. On the other hand, even the studies that Johnson himself cites suggested that there may be some offset, with estimates of its strength ranging between 30 and 50 percent. And there is conflicting evidence in the macroeconomic data on the role played by offsetting behaviour. On the one hand, Johnson is right that as Canadian government debts rose through the 1970s and 1980s into the 1990s, Canada's net overseas deficit also increased. The emergence of these twin deficits suggests that private Canadian borrowers were being forced into foreign markets by the crowding-out effect of government debt. On the other hand, private savings rates are positively correlated with government deficits: as deficits rose during the 1970s and 1980s, private

saving typically rose, too, while as deficits fell from the mid-1990s on, so did private saving rates. In other words, as governments began to run surpluses and in effect save on their behalf, Canadians evidently decided to reduce their own saving, exactly as Ricardian theory would suggest. Coulombe closes his comments by relating how he himself, by explaining the idea behind Ricardian equivalence, unwittingly converted one Canadian consumer to Ricardian-style behaviour: having learned from her economist-husband that, via the surpluses of the last five years, the government was now saving on her behalf, Coulombe's wife decided to go shopping.

What Is the Cost of Government Debt?

In 1995, when the federal government had apparently hit the debt wall, it was spending approximately $45 billion per year on interest payments on its debt. Add in the other levels of government and total government interest payments were $78 billion per year. In the short term, governments can borrow to pay interest. In the long term, however, borrowing to pay interest is not a sustainable policy. If government debt eventually leads to higher taxes because of the need to service that debt, how do these higher taxes affect the economy?

Laymen think of the cost of taxation as being the dollar amounts taken away from them. Economists regard that amount as a simple transfer of purchasing power from taxpayers to the beneficiaries of public spending. They see the cost of taxation as instead being the cost of the "distortions" it imposes on economic activity. Taxes are distortionary when they cause changes in the relative prices of specific goods or activities and, as a result, lead households or firms to change their behaviour. For example, excise taxes on gasoline make gasoline more expensive than other goods and cause consumers to substitute away from gasoline and toward alternatives, such as car-pooling, public transportation, or the use of more fuel-efficient vehicles. In this day of environmental concerns, such a "distortion" of behaviour may seem like a good thing, but many tax-caused distortions are potentially very costly for the economy. For example, one distortion caused by high income taxes is that the rate of return from saving is reduced when interest and dividends are taxed as ordinary income. If taxation does reduce the return to saving, people may save less, which may in turn reduce the overall rate of investment and therefore the rate of growth in the economy.

To address this potential link between government debt, interest payments, taxation and economic growth, we turned to *Bev Dahlby* of the University of Alberta, a specialist in public finance and Canada's leading expert on the "marginal cost of public funds." Dahlby begins by noting that for many years economists who thought about economic growth organized their thinking with theoretical

models in which the economy's long-run growth rate was in fact "exogenous," that is, was taken as given, rather than being explained by the model itself. Not surprisingly, no one was satisfied with such non-explanations for why some countries grow faster than others. In recent years, however, economists have worked hard at digging deeper, trying to uncover the wellspring of economic growth. As a result, they now generally use "endogenous" growth models in which the economy's long-run growth rate is explained by elements within the model, such as tax rates, inflation, investment, education and so on.

In his paper, Bev Dahlby uses a very simple endogenous-growth model to think about the relationship between government debt, income taxes and the long-run rate of economic growth. Stacking the argument against a debt-growth effect, he builds a model in which Ricardian equivalence holds perfectly. Yet he finds that even in such an extreme behavioural setting government debt *does* impose a cost on the economy. The reason is that his model assumes, realistically, that taxes are distortionary and that the distortions they cause end up reducing the economy's growth rate.

Dahlby's model is built on the following three key elements. First, the nation's output is assumed to be proportional to its capital stock. (All of the interesting action in this model involves capital, rather than labour, so he simply assumes the amount of labour available is constant.) Since the capital stock only rises through the act of investment, the rate of growth of output ends up being proportional to the economy's rate of investment.

Second, the model is of a closed economy. Domestic investment is therefore necessarily equal to domestic saving: there is no other way of financing investment. Domestic saving comes in two kinds, public and private. If taxes are greater than public expenditure, the government runs a surplus that is then available to finance private investment. If private individuals do not consume all of their after-tax income, they too can make funds available to private investors. Overall domestic saving is the sum of private and public saving.

Third, the government taxes income, which is just the value of output, in a proportional manner. The resulting tax revenue is used to finance government expenditures, which throughout Dahlby's analysis are held at a constant share of GDP.

Imagine what happens in this simple setting if the government chooses to finance a greater amount of its expenditures with debt. The greater stock of debt must be serviced and this requires taxes to be raised to make the necessary interest payments. Even though households are purely Ricardian in Dalhby's model, so that they end up increasing their saving by exactly enough to offset the decline in government saving, there is an additional effect on the economy coming from the distortionary effect of the higher income taxes required to pay

the now-higher interest costs. But as income taxes rise, the rate of return from saving declines. Households naturally choose to save less and consume more and the result is a decline in the economy's rate of investment, because in this closed economy investment can only be financed by domestic saving. As the rate of investment declines, so does the economy's long-run growth rate.

How large is this tax-distortion effect? Dahlby calibrates his model by choosing the tax rate, the level of government spending, and the debt-to-GDP ratio so that his "base case" resembles some of the key aspects of the current Canadian fiscal position. He then imagines an experiment in which the government reduces the debt-to-GDP ratio from 100 percent to 50 percent. Those numbers are not chosen by accident: in 1995 the combined (federal plus provincial) debt was approximately 100 percent of Canada's GDP and it is currently about 75 percent. Thus, if the actual debt-to-GDP ratio continues on what appears to be its likely path for the next few years, Dahlby's experiment gives us some sense of the changes we might expect in the economy's growth rate.

Dalhby finds that the 50-percentage-point decline in the debt-to-GDP ratio leads to an increase in the growth rate of GDP of 0.1 percentage points. On the face of it, this seems like a very small effect, but keep in mind that annual growth rates in real (inflation-adjusted) per capita terms are often in the range of 1.0 to 1.5 percent, so a change of 0.1 points is not to be dismissed quite so lightly. Moreover, the magic of compounding means that even small changes in annual growth rates can, if sustained over many years, have important effects on living standards.

Another way to think about the importance of a change in the annual growth rate of GDP is to express it in terms of present value. Dahlby computes the present value of the 0.1 percentage-point change in the annual growth rate of GDP to be approximately $15 billion. That is, a higher growth rate of 0.1 percent per year into the infinite future is equivalent to having higher GDP today of $15 billion, or roughly 1.3 percent of 2002 GDP.

Dahlby offers still another way to think about the cost of government debt, this one based on the concept of the "marginal cost of public debt," that is, the cost of increasing the debt by $1. This cost depends on how responsive people are to taxation and therefore on how great the economic distortions are from taxation. It also depends on the value of government-provided goods and services. If, as Dahlby's model assumes, government expenditures are a constant proportion of GDP, then a tax-induced slowdown of economic growth will cause the public sector to provide fewer goods and services than it otherwise would, and, as he writes, that is "an important aspect of the marginal social loss from a higher public debt."

Again using mid-1990s Canadian values for his calculations, Dahlby finds that the marginal cost of public debt is between $1.06 and $1.27 per dollar borrowed

by Canadian governments, depending on what assumption is made about the responsiveness of saving to tax rates. The mid-range value of $1.15 implies that, if a public expenditure is financed by borrowing, it should bring a social benefit of $1.15 in order to be considered worthwhile. Another way to look at it is that public projects should have a rate of return of 15 percent in order to be accepted. This does not actually have to be a cash return but should be the cash-equivalent of any non-cash benefits public spending may bring, assuming they can be at least guesstimated. Dahlby concludes his paper by wondering whether many public projects currently proposed by supporters of new government spending can reasonably claim a 15 percent rate of return. Of course, one public project *would* bring such a return. If raising a dollar of public debt costs $1.15 after the economic inefficiency it induces is taken into account, lowering the public debt by a dollar would avoid $1.15 of cost, which suggests that reducing debt would itself clear the "hurdle" rate of return of 15 percent.

We asked *Tiff Macklem*, Chief of the Research Department at the Bank of Canada, to comment on Dahlby's paper. Since the late 1980s, Macklem has spent much time thinking about the interaction of government debt and monetary policy and especially about how public debt might affect both the level and the growth rate of GDP. He notes that, despite the simplicity of Dahlby's model, it is successful not only in illustrating one of the key mechanisms by which government debt affects the economy but also in giving us a reasonable sense of the magnitude of the effect.

But Macklem argues that the real world contains other mechanisms that we should not ignore and that, if included in Dahlby's model, would increase the predicted cost of government debt. First, as Johnson's paper emphasizes, Ricardian equivalence probably does not hold and so private saving will fall by more in response to government deficits than it does in Dahlby's model. The result will be a larger decline in investment and therefore in the economy's growth rate. Second, high income-tax rates also tend to discourage work effort in the real world, whereas in Dahlby's model, with the labour supply constant, this effect is absent. This reduction in work effort will decrease the level of GDP and, depending on one's view of the growth process, may have a negative effect on the economy's growth rate. Third, Dahlby's model contains only one type of tax and no uncertainty. In the real world, however, governments that need to increase their tax revenue may increase an entire range of taxes, and they will generally not be transparent about when the various changes will take place. Furthermore, there is sometimes uncertainty about whether the government will make good on its debt, the alternative being either the extreme step of outright repudiation or, less drastically, partial repudiation achieved by inflating away the debt via excessive monetary expansions. Macklem argues that these

uncertainties add risk premiums to both government and private debt, and that these must also be viewed as a cost of government debt.

What Is the Optimal Debt-to-GDP Ratio?

Now we get to the $64,000, or perhaps that should be $786 billion, question: What is the "right" amount of government debt? *Is* the debt war over? Do Canadian governments need to reduce their debts more than they have already? Or have they already proceeded too far down the path of deficit and debt reduction? One Canadian economist, who has worked on this question extensively, and, together with a series of co-authors, has taken a firm stand on it, is *William Scarth* of McMaster University. We asked him to address this bottom-line question directly.

Economists typically analyze public debt from three perspectives: efficiency, macroeconomic stability and equity (or fairness). Scarth is no exception. His conclusion, somewhat surprisingly, is that analyses that focus on efficiency and macroeconomic stability do not lead to very precise recommendations regarding the optimal size of the public debt. By contrast, analyses based on equity do, though the precise recommendations depend on which definition of fairness is adopted. Economists will find this more than a little discomfiting, for if we have a true professional expertise, it is in the analysis of efficiency, which is the bedrock of positivist microeconomic analysis. And in macroeconomics we have contributed a great deal of knowledge and maybe even a little wisdom on the related questions of what makes the economy cycle and how its cycles may be dampened. But economists are the first to admit that we have no special remit for making policy recommendations based on questions of fairness. So if, as Scarth argues, fairness is the real reason for worrying about the debt, economists may not be better placed than anyone else to tell society what to do.

Let us begin with Scarth's review of efficiency, in particular, the efficiency of taxation that is required to service any government debt. We have already seen the meaning of distortionary taxation in our discussion of Bev Dahlby's paper. In economics, the concepts of "efficiency" and "distortions" are related. In fact, the most efficient tax an economist can imagine is one that is entirely non-distortionary, one that leads to no changes in relative prices, and therefore does not skew households' or firms' decisions regarding which specific activities to conduct. An example is a so-called lump-sum tax, a tax unrelated to people's income, consumption, saving, wealth or any other decision they make. Because the lump-sum tax does not alter the "rate of return" from any activity it does not skew people's behaviour. Unfortunately, such lump-sum taxes are a thing of textbooks only. They are widely viewed as unfair, a "fair" tax being one that *does*

depend on the level of a person's income, wealth, or consumption. Margaret Thatcher tried to introduce a lump-sum tax (she called it a poll tax) in the early 1990s, and lost her job as a result.

Because real-world, non-lump-sum taxes are distortionary, perhaps it would be better if governments found other ways to finance their spending needs. Enter debt policy. One study Scarth quotes suggests that instead of being debtors (i.e., borrowers) governments should become creditors (i.e., lenders) and live off the interest payments their assets would generate. This way they could avoid having to levy inefficient taxes in order to service their debt. The same study concluded that in the United States the optimal debt-to-GDP ratio is *negative* 300 percent, that is, governments should build up assets equal to three times the economy's GDP and then pay their current expenditures out of the interest these assets would generate. If the same rule held in Canada, this would have required our governments (in 2002) to hold financial assets of roughly $3.6 trillion dollars. Of course, in 2002 Canada's governments actually owed about $786 billion, so pursuing this policy would have required them to start running very large surpluses for many years to come, a policy that, to put it mildly, does not seem to be in the cards politically.

The study Scarth cites assumes there are no benefits from governments running debts: the only efficiency consideration is avoiding taxes. But that may not be the case. As we saw in David Johnson's paper, government borrowing can help "liquidity-constrained" people by allowing them to smooth out their lifetime consumption. In economic models that assume, probably realistically, that significant numbers of people are liquidity-constrained in this way, governments incurring debt now involves a trade-off. More debt helps those who are liquidity-constrained, but more debt also means more taxes (since the debt has to be serviced) and more taxes, as we have seen, mean inefficiency. Scarth notes that modifying the simple model already cited to take into account this added virtue of public debt produces an optimal debt-to-GDP ratio of 66 percent, news that is much more encouraging to Canadian governments, with their total combined debts of about 70 percent of GDP in 2002.

Unfortunately for those who would like to pin down an optimal level of the public debt and point government policy toward attaining it, the same study suggests there are only small costs from departing from the optimal public debt. The reason is that there are both costs and benefits to accumulating debt. The cost is that more debt requires more taxation. The benefit is that more debt means liquidity-constrained consumers are better able to borrow through the government. In the models Scarth reports on, it turns out that over a wide range of possible debt levels the costs and benefits may be more or less offsetting.

Scarth concludes from all this that efficiency analysis is not very helpful in determining the optimal level of government debt. The optimal debt-to-GDP

ratio can change significantly according to the assumptions of the particular model used. And there may not be a large social cost to departures from the optimum. If the target is very sensitive to the assumptions economists make about the way the world works, and if missing the target does not really matter much, policy makers are likely to conclude that the debt war probably is over, since there does not seem to be much point in engaging in further battles.

If efficiency considerations provide little guidance to policy makers, how about concerns about macroeconomic stability? Since the Keynesian revolution of the 1940s and 1950s mainstream economics has held that governments can use deficit spending to help offset cyclical fluctuations in the economy. In the early postwar years there was great optimism about the possibilities for counter-cyclical fiscal policy. As the decades passed, however, and the difficulties of both anticipating downturns and implementing tax cuts or spending projects in a timely manner became clear, optimism faded. But the standard view among economists is still that balancing the budget on an annual basis is destabilizing, that it is far better policy to try to balance the budget over the longer period of the business cycle. The argument against balancing the budget every year is that, when the economy is hit by a shock that slows growth and maybe even causes a recession, budget balance will require some combination of an increase in taxes and a reduction in government spending. But these changes will only make the downturn worse, thus making the economy less stable. The standard view is that by allowing the budget deficit to rise during slowdowns and fall during recoveries, stability of output and employment can be enhanced.

Scarth suggests, however, that a policy of annually balanced budgets may not be as unwise as most people think. He has two reasons for believing this. The first is that, unless the government is to abandon debt targeting altogether, raising the debt ratio to fight a recession requires lowering it later to get it back to the desired long-run ratio. As a result, while the recession may not be as deep as it might have been had the government not run a deficit, the fiscal retrenchment required to get the debt ratio back on track means the subsequent recovery will not be as robust as it would have been, either. Perhaps that trade-off is acceptable, but it should be recognized and its acceptability should be debated.

Scarth's second reason for thinking that annually balanced budgets may not be too harmful involves the interaction of fiscal and monetary policies. Even if fiscal policy does react to the business cycle in such a way as to keep the budget deficit constant, a monetary policy that is guided by an inflation target, as it currently is in Canada, will automatically work in the direction of keeping the economy stable. For example, if a negative shock hits the Canadian economy and slows the rate of growth of GDP, taxes may be increased and government spending may be cut to keep the budget deficit constant. Taken by themselves, these

fiscal policy adjustments would add to the negative shock, further slowing the growth rate of GDP. But if monetary policy is geared to keeping inflation within a target band, the central bank will respond to this combination of negative shock and fiscal tightening by lowering interest rates, thus stimulating spending in the economy. If the central bank does its job correctly, the economy will be no less stable than in the case where deficits were allowed to rise in response to the negative shock. Indeed, in a series of simulations, Scarth found that "short-run output volatility is increased only to a very limited extent when a fairly rigid target for the annual budget deficit is adopted." Scarth's conclusion is that concerns about macroeconomic stability do not bring us to a policy recommendation about the optimal size of the government debt.

For Scarth, like Robin Boadway before him, optimality is mainly a question of intergenerational fairness, and that gets economists into deep water, for what is fair? Boadway gave a qualitative answer to that question: if a generation suffers a significant cut in its standard of living for reasons, such as war or depression, that seem temporary and are not of its own doing, then it may be reasonable for it to borrow and force future generations to share some of the costs of its short-term difficulties. Scarth tries to put numbers onto this kind of analysis to see what sorts of intergenerational transfers it leads to, and he does so in a forward-looking way, trying to estimate the intergenerational implications of the next big change likely to hit the Canadian economy – the retirement of the baby boomers.

Scarth argues that the boomers' retirement will cause a decline in living standards – not an absolute decline, but a decline from what they otherwise would have been. Why is that? As the boomers retire and leave the labour force, labour will become scarcer. The result will be an increase in wages, which will tend to increase the living standards of the younger generations still working. A factor operating in the opposite direction, tending to reduce living standards, is that as labour does become scarcer, capital will become relatively more abundant, so its rate of return (whether in the form of interest or dividends) will fall. However, as the boomers age, taxes on the young will have to increase in order to continue funding the public pension system, so the net effect on the younger generation is ambiguous. A third effect on overall living standards relates to the well-being of the boomers themselves. As labour becomes scarcer, capital will become relatively more abundant, so its rate of return (interest or dividends) will fall. Since the retired boomers will be living off the return from their accumulated capital, their living standards will decline. Summing together all three effects, it is unclear what happens to overall living standards. Scarth argues, however, that in his model with realistic assumptions, the overall effect is a decline in average living standards, and that this result is robust to reasonable changes in his assumptions.

This predicted reduction in living standards as a result of the baby-boomers' retirement is Scarth's starting point. He then asks whether reducing government debt might be a way to offset the fall in living standards, and if so, how much of a reduction would be necessary to fully offset the shock.

How might a reduction in government debt increase future living standards from what they otherwise would be? First, lower debt means lower debt service, which creates room in the annual government budget for either new spending or reduced taxes. This is the "fiscal dividend" we have all heard about, though it pays off only after a period of costly "investment" in deficit reduction. Second, as the government deficit turns into a surplus, and thus the amount of government dissaving falls, the amount of national saving (private plus public) increases. In an open economy like Canada's, such an increase in national saving leads to a reduction in foreign indebtedness and thus an increase in the resources that can be consumed domestically rather than used to make interest payments to foreigners.

Putting this all together, Scarth now has two effects to balance. The retirement of the baby boomers will reduce overall average living standards in the future (at least from what they otherwise would have been). But a reduction in government debt will have the opposite effect. The policy question therefore is: "How much of a reduction in government debt is needed to exactly offset the effect of the boomers' retirement?" Scarth's answer, after calibrating his model for the predicted change in the age structure of the Canadian population, is that the federal government's debt-to-GDP ratio must fall by approximately 50 percentage points from its high point in the mid-1990s. At that time it was about 75 percent, and it has since declined a little over 30 points, so to reach the level necessary to achieve intergenerational equality it must fall by almost another 20 points.

Scarth naturally is wary about using a simple exogenous-growth model to make firm conclusions about policy, and he discusses the importance of thinking through the same policy question in a more complicated setting in which population aging and tax changes may influence the economy's long-run growth rate. If the aging of the population leads to a reduction in the rate of accumulation of human capital, that is, skills and knowledge that are typically acquired on the job or through formal training, the economy's growth rate may fall, which means still further debt reduction would be required if the effect of the boomers' retirement is to be fully offset. On the other hand, the effect of distortionary taxation works in the opposite direction. Following the initial debt reduction in Scarth's policy experiment, reduced taxation leads to an increase in the rate of return to saving and thus to an increase in total saving and capital accumulation, which would tend to increase the economy's future growth rate (for exactly the same reason as Bev Dahlby emphasized) and thus reduce the necessary amount of debt reduction required to offset the effects of population aging.

After reviewing these and still other effects likely to be found in more sophisticated endogenous-growth models, Scarth concludes that, at least as a first pass at the problem, there is good reason to think that many of these effects more or less offset each other. He therefore sticks to his policy recommendation that the federal debt-to-GDP ratio be reduced to 25 percent.

In his comments on Bill Scarth's paper, the Université de Montréal's *François Vaillancourt* makes a number of interesting points and then proposes his own optimal debt rule. Vaillancourt argues that public policies to rectify alleged market failures having to do with people's liquidity constraints should take into account whether or not these constraints are voluntary. If people are poor through no fault of their own, that is one thing, though governments' borrowing on their behalf may not be the best way to remedy their poverty. But if people are living from hand to mouth essentially because they were "born to shop," it is not clear why public policy need respond.

On the question of intergenerational equity, Vaillancourt agrees with Scarth and with Robin Boadway before him that when large shocks hit a generation it may be justified in using public debt to pass along some of the cost to subsequent generations. But he takes a harder line than Scarth on the economic difficulties experienced by the baby-boom generation, arguing that the hardships involved in the oil shocks of the 1970s do not compare with either World War II or the Great Depression. If politics were not a constraint, Vaillancourt would like to see Canada's net debt reduced by a policy of age-specific taxes or user charges aimed at boomers.

Vaillancourt agrees with Scarth that a *Treaty of Maastricht*-style "zero-deficit" rule need not impede the conduct of a counter-cyclical macroeconomic policy, so long as monetary policy can adjust accordingly. But his own preferred deficit rule is different from that. He would take what he calls a "balance-sheet approach" to public debt and allow governments to run deficits only when the proceeds were used to purchase real capital, by which he means tangible assets of one kind or another, whether buildings, roads, dams, harbours, national forests and so on. Debt is only one side of the balance sheet. A debt of 50 percent of GDP may be perfectly appropriate if it has been used to finance the acquisition of public assets. By contrast, a debt of 25 percent may be inappropriate if it has been used to finance current consumption.

A glance at the evolution of Canadian government balance sheets over the last 30 years suggests to Vaillancourt that in fact the debt problem lies mainly with the federal government. Provincial governments maintained their net worth up until 1981, after which it went slightly negative. Municipal governments and school boards actually increased their net worth from 1971 through 1995. Taken together, non-federal governments essentially followed Vaillancourt's rule of only incurring debt when they were acquiring assets. The federal government, by contrast, saw a major decline in its net worth as,

between the mid-1970s and mid-1990s, it borrowed heavily without offsetting this borrowing by the acquisition of assets.

How Should We Manage the Debt?

Even if governments heed the message of some of the contributors to this volume and reduce their debt loads, they are unlikely to entirely eliminate their debts. While economics textbooks at all levels have much to say about fiscal policy and the problems of government debt, the issue of how public debt should best be managed usually is absent. In Canada, the Bank of Canada is the federal government's fiscal agent and thus is responsible for managing the government's debt. We therefore turned to two economists at the Bank of Canada, *David Bolder* and *Clifton Lee-Sing*, to explain the choices available to governments, though not necessarily, since they are both public employees, to pick among them.

Bolder and Lee-Sing begin by canvassing the mission statements of debt managers in a number of countries, an exercise that leads them to a generic version of the modern debt manager's mission statement, namely: *to raise stable, low-cost funding for the government and to maintain a well-functioning market for government securities*. Bolder and Lee-Sing then structure their paper around an explanation of each of these attributes of good debt management.

There are many types of government debt instruments. Governments can issue treasury bills, coupon bonds, savings bonds, lottery bonds; it is almost true that the number of instruments is limited only by the issuer's imagination. And, of course, each instrument comes with a wide choice of time horizons. Debt can be contracted for as little as 30 days or as long as 30 years. And although most Canadian government debt is denominated in Canadian dollars it can also be issued in foreign currencies, usually US dollars. Finally, governments have recently introduced "real" or "indexed" bonds that specify not a nominal interest rate but rather a real (i.e., inflation-adjusted) rate of return.

How is a government to choose among this bewildering array of possibilities? To estimate the consequences of different economic scenarios for each of a large number of possible debt configurations most governments end up using computer models of their debt structure and the economic environment they operate in. Instead of guiding us through the dense technical thicket that these exercises involve, Bolder and Lee-Sing instead focus on two key principles that underlie all such analysis.

The first is the trade-off between cost and risk. In most countries, and at most times, short-term debt generally carries a lower interest rate than long-term debt. So why don't governments minimize their interest costs by issuing only short-term debt? Because the interest paid on short-term obligations tends

to jump around more than that paid on long-term obligations, and the "yield curve" occasionally becomes inverted, that is, short rates sometimes exceed long rates. If a government does opt mainly for short-term debt, it may find that its interest costs rise to painfully high levels if it has to refinance its debt during a macroeconomic crunch. During the Asian crisis of the late 1990s many governments had to refinance at crisis-level interest rates.

This trade-off between risk and cost is well known to anyone who has ever had a mortgage. Should you keep your mortgage open to take advantage of low current interest rates or should you lock in for fear that rates will rise? It might be thought that governments, which seldom die or go bankrupt, should be indifferent to risk, but, as Bolder and Lee-Sing argue, unpleasant refinancing surprises can knock a hole in the most carefully planned budgets and may eventually cause governments to pay higher interest rates on all their debts.

As employees of the Bank of Canada, Bolder and Lee-Sing are not well placed to be critical of current debt-management policies in Canada. But they do note that since the mid-1990s the federal government has shifted its balance toward issuing more longer-term debt and less short-term treasury bills. Although short-term interest rates have remained very low by historical standards, the government's goal has been to avoid unpleasant refinancing surprises. Prudence was the official watchword of Paul Martin's term as finance minister, and the move to lengthen the average maturity of government debt is simply one more example of that prudence. (Our conclusion, not Bolder and Lee-Sing's.)

The second key principle is that in order to maintain well-functioning markets for government securities, it is necessary to have at least some government securities in the market. If the drive to reduce government debt ultimately succeeded in eliminating the debt entirely, the market for government securities would cease to exist. Because the Bank of Canada transmits changes in interest rates to the markets by influencing the purchase and sale of government bonds, if the market for government bonds dried up that would make the conduct of monetary policy more complicated. Moreover, because government bonds are usually thought of as being risk-free, the interest rates they pay are a useful benchmark for participants in private credit markets. Without them, borrowers and lenders may not have a good idea of how much of any quoted interest rate is interest rate and how much is risk premium.

In sum, although the decline in Canadian governments' outstanding debts since the mid-1990s has almost certainly been a good thing for the country, it has complicated the job of maintaining well-functioning markets for government debt. On the other hand, things are not yet desperate in the debt markets. Governments have not got out of the debt game entirely. They still have large stocks of outstanding debt, substantial chunks of which are regularly coming due. Because government surpluses are not large enough to redeem all these debts at once, the debts have to

be rolled over, that is, replaced with new debt, and this helps maintain the efficiency of the debt markets. In addition, as Bolder and Lee-Sing describe, government debt managers have come up with new ways of maintaining the gross flow of debt into the market even as the net flow has declined. This helps maintain the liquidity of the market, which they argue both provides Canadians with an important public good and also lowers governments' interest costs. It is also good for securities dealers, of course, though taxpayers may wonder whether what is good for Dominion Securities is necessarily good for the Dominion of Canada (again, our comment, not Bolder and Lee-Sing's). Those who argue that it is believe that keeping the market and its attendant expertise in place will save costs when and if governments go back to borrowing as frequently and as much as they used to.

In his comments on the Bolder and Lee-Sing chapter, Carleton University's *Huntley Schaller* focuses on an idea prompted by their discussion of the different types of financial instruments available to governments, but also firms. As noted already, an increase in Canadian government debt can cause no more than an infinitesimal rise in world interest rates: Canada is simply too small an economy to have that effect. As a result, most economists have assumed that greater government borrowing cannot affect the cost of capital Canadian firms face. Government borrowing may force them offshore to find funds, and that in turn may force Canadians to share more of their GDP with foreigners, but it will not affect the level of investment in Canada because interest rates will not change. But what if, with no change in the underlying world interest rate, foreign lenders know less about Canadian firms than Canadian lenders do and therefore charge them a higher risk premium, above and beyond the interest rate, than Canadian lenders would? If that is true, Canadian government borrowing still will not affect the world interest rate but because it will force Canadian firms to borrow from lenders who know less about them, it will raise the effective cost of their capital. And that may well cause the Canadian investment rate to decline. Schaller's own work on the interest rate/investment connection suggests that higher costs of capital can have quite substantial effects on the decision to invest. He concludes that "the crowding out caused by government deficits could be substantial even in the open-economy case."

Do We Need Rules for the Debt?

One approach to controlling government debt is to legislate against it. This may seem a deceptively simple approach, but in fact many governments around the world have asked their legislatures to impose self-denying ordinances on themselves. Fiscal rules come in many styles. To assess their usefulness, we asked *Don Drummond* to provide a paper. As senior vice-president and chief economist of the TD Bank, Drummond heads up one of the best applied policy shops in the

country. Even more important for our purposes, he spent 23 years in the federal Department of Finance, ending up as associate deputy minister before moving on to the private sector.

Drummond is not opposed to the principle of having formal rules on budget deficits or government debt. Governments may have very good reasons for wanting to limit their ability to borrow money. Far-sighted politicians will understand that governments sometimes have trouble seeing beyond the next election or the passing of the current generation of voters. If future generations cannot vote their interests, fiscal rules that prevent their exploitation, whether in the form of statutes or constitutional provisions, may serve as a useful substitute. Governments may also wish to reassure lenders who may be wary of being burned by profligate fiscal policies. Whether for these or other reasons, many jurisdictions around the world have decided to impose restraints on themselves. Most US states operate under borrowing restrictions while most Canadian provinces have fiscal rules of one kind or another, even if the majority were adopted only as recently as the 1990s.

Drummond's views on the practical value of fiscal rules seem to have been greatly influenced by the federal government's experience with them, which he lived through as an official in the Department of Finance. Conservative Finance Minister Michael Wilson introduced the Spending Control Act which, as its name suggests, imposed legislative limits on the federal government's ability to spend money.

In Drummond's view, choosing exactly the right fiscal rules is a demanding art. Rules that are too rigid can put the government that must live by them in a fiscal straitjacket in times of economic or national emergency. Yet rules that are sufficiently flexible to deal with untoward economic events tend to be complex and thus quickly lose their transparency. The Mulroney government's rules exempted strongly cyclical spending programs such as unemployment insurance and also allowed the legislated spending limits to be exceeded so long as the excess was made good by undershooting the limits in the two succeeding years. In Drummond's view, these rules were too complicated and as a result failed the communications test: they could not easily be explained to ordinary Canadians, and therefore the government's success or failure in achieving the rules did not significantly affect its fiscal credibility.

Upon taking office in 1993, the Liberal government of Jean Chrétien decided to scrap fiscal rules in favour of a strong political commitment in favour of deficit reduction. Hence Paul Martin's declaration, already referred to, that his fiscal targets would be met "come hell or high water," a commitment that helped the Liberals achieve a balanced budget within five years of taking office. Drummond concludes that while fiscal rules may be useful in achieving fiscal targets, they clearly are not necessary. Some political commitments are every bit

as good as formal rules (and some even better). The country now seems to have worked itself into a situation in which we have an informal but powerful rule that the federal budget must be balanced. After five years of surpluses, in both good and not-so-good economic times, the political cost to the finance minister who took the federal government back into the red would probably be very high.

Should we now move on to the federal debt and try to establish a fiscal rule concerning it? Drummond reports that in its early days, Paul Martin's Finance Ministry did consider establishing targets for the debt-to-GDP ratio but decided that these were not practical, mainly for reasons having to do with the denominator of the ratio, the GDP. GDP statistics are subject to frequent after-the-fact revision. The estimates that Statistics Canada publishes every quarter are normally revised a number of times, sometimes years later. A government that was running close to the statutory debt limit might find that every revision in the GDP required adjustments in its net debt, and therefore in its current budget balance. A second reason why targeting the debt-to-GDP ratio would be difficult is simply that, quite apart from problems of revisions, the government does not control the GDP. Granted, it may not control its debt (the ratio's numerator) all that closely either – changes in interest rates or economic conditions lead to changes in the current budget balance and therefore in the debt, as Kneebone and Chung clearly show – but it has even less control over the GDP.

There is a further, even more important difficulty with targeting the debt-to-GDP ratio. In Drummond's view, what made the emergence of an informal deficit rule possible was widespread agreement both among economists and in the public at large that the deficit was badly out of control and in desperate need of reduction. As a couple of the other papers in this volume make clear, while there does seem to be a consensus that government debt is still too high in Canada, there is no agreement either inside or outside the economics profession about the optimal debt-to-GDP ratio. Drummond argues that until economists lay the intellectual groundwork for such an agreement, there is no point trying to devise a formal fiscal rule to govern the future evolution of government debt. He also argues that the deficit and debt are not the only fiscal variables of interest to policy makers. The path of public spending and the level and composition of taxation are also important and may be candidates for fiscal rules of one kind or another, although again Drummond implies that the economics profession is some distance from establishing exactly what the best policies in these areas are.

In his comments on Don Drummond's paper, the University of Alberta's *Paul Boothe,* a public finance economist with hands-on experience helping run fiscal policy in both Alberta and Saskatchewan, begins by underlining Drummond's con-

clusion that if rules are to work they must enjoy the support of both the government that has to live under them and the voters that put it in power. They should also be simple, strict, hard to amend and easy to communicate to both spending departments and the public. Moreover, adherence to fiscal rules should be easy to measure and the benchmark against which they are measured should be the actual objective – e.g., the realized budget balance – rather than forecast outcomes.

Boothe agrees with Drummond that governments can get their fiscal house in order without fiscal rules. Saskatchewan's NDP government, which Boothe worked for in the late 1990s, simply announced that it intended to balance its budget during its first mandate and then proceeded to do so. On the other hand, Ralph Klein's Conservative government of Alberta, which Boothe also worked for, used formal fiscal rules to guide its way to deficit and then debt reduction.

A common argument against budget-deficit rules is that they remove the government's ability to respond to economic shocks in a counter-cyclical and thus stabilizing, manner. Boothe does not see this as a major problem. He argues that the most effective counter-cyclical fiscal policy comes from the "automatic stabilizers" built into the tax-and-transfer system, and that much discretionary fiscal policy ends up being too late to be effective. Even worse, because of the lags involved in creating programs and planning the spending, such discretionary fiscal policy often ends up being destabilizing: its effects kick in only after the economy's natural adjustment process has begun to reverse the effects of the initial shock.

Drawing on his experience in Alberta and Saskatchewan, Boothe argues that fiscal rules have three main roles. First, they help political leaders resist demands for more spending, whether from around the cabinet table or from the general public. "Working in a finance department," he writes, "one quickly realizes that even after you eliminate spending requests of questionable value, there are always more worthy projects than there is money available to finance them." Second, setting and meeting formal rules or targets helps establish and then bolster the credibility of the fiscal authority. The main reason complex fiscal rules usually fail is that they are too complicated to allow the public to determine whether the government has been successful or not, thus leaving no way for the government to establish its credibility.

A third role for fiscal rules is dealing appropriately with volatile revenues, which are especially important in a province dependent on its energy sector. Alberta's current fiscal rule stipulates that three-quarters of any windfall from the energy sector must be used for debt reduction, and a much smaller fraction (2.5 percent) as a cushion to prevent the budget from going into deficit. Thus the Alberta rule takes most of the revenue volatility out of the annual budget picture and helps focus public attention on longer-run averages for spending and revenues.

Boothe closes with a warning about the danger of moving to accrual accounting, as the federal and most provincial governments are doing. Under accrual accounting, only the current interest and depreciation expenses associated with a capital purchase show up in the annual budget. A jurisdiction that purchases a dollar's worth of new capital will increase its current budgeted expenses by only a small fraction of that dollar, say five cents. Such a change has significant implications for what the conventional measure of a budget deficit really means, and economists and policy makers will have to think carefully about what sensible fiscal rules might look like in such an environment. Moreover, allowing politicians to spend dollars that cost them only five cents in the budget may have dangerous implications for their behaviour. Boothe agrees with Drummond that the country needs to debate these issues, however arcane they may seem, if the fiscal achievements of the recent past are not to be squandered.

What Have We Learned?

After two days and eight papers, we needed a couple of "wise men" to try to put it all together and give us their assessment of what we had learned and what we had yet to learn. For this we turned to two outstanding Canadian economists who have long and distinguished records in analyzing many different problems in Canadian economic policy: *Lars Osberg* from Dalhousie University and *Jack Mintz*, President of the C.D. Howe Institute and an economics professor at the University of Toronto.

In his comments on the conference, *Lars Osberg* challenges what seemed to be a consensus among the paper-givers that the big question in any discussion of debt policy is intergenerational redistribution. In his view, what is more crucial is *intra*generational redistribution, an issue that arises because the debt debate is often a proxy for a more general and more ideological debate about the appropriate role and size of government.

Osberg observes that among economists there is quite a wide range of opinion about what level of debt would be optimal. An informal poll of attendees at this conference found that opinion ranged between 20 and 50 percent of GDP, which will strike most readers as a substantial variation – except that, as we have seen, within the literature on this question opinions range from –300 percent (a number that would require the government, as Osberg notes, to own just about all the capital in society) to +70 percent. A "fiscal anchor" whose size is so hard to pin down may be of dubious value.

But if so, what is all the fuss about in the debt debate? Osberg argues that in fact the debate is largely about how big the government should be. In principle, the questions of, on the one hand, how big government should be and, on the other, how it should finance its spending, are separate. In practice, they are usually closely

linked. As Osberg puts it, "expenditure cuts have been crucial in producing the recent surpluses of Canadian governments, and tax cuts have followed, so deficit elimination, debt repayment and a reduction of distributional equity and the role of government in Canadian society have coincided."

Use of the word "equity" requires some discussion of the question "equity for whom?" If more government spending is financed with bonds, then at some future date more potential consumption will be transferred from taxpayers to bondholders. Whether that is a good thing or not is a question of *intra*generational fairness. By contrast, a focus on *inter*generational equity, whose analysis usually regards all members of a given generation as identical, eliminates this problem by assumption. But government debt only comes into existence because people are different: some people are willing to postpone their consumption by purchasing the debt; others prefer to consume now and pay higher taxes later and they therefore urge the government to incur debt. That the members of a generation – best defined, in Osberg's view, as all the people born at a certain time – differ in this respect is a key aspect of reality and should therefore be a key part of the analysis of government debt.

Another difficulty with emphasizing intergenerational rather than intragenerational equity is that doing so causes us to focus where the action isn't. Osberg argues that, except in very unusual times, the differences *between* generations in terms of income and consumption are quite small compared to differences *within* generations. It follows that if equity is to be seriously pursued as a social goal, there is probably a greater payoff from focusing on redistribution within rather than between generations.

That, says Osberg, is where the question of the size of government comes in. Although economists customarily argue that government interventions in the economy should aim at correcting "market failures," and therefore be efficiency-enhancing, in fact most of what Canadian governments do, whether in health care, education, or social welfare, aims at redistributing resources from those who have more to those who have less. Thus, if concern about debt reduction leads to a reduction in the size of government, the effect is likely to be a reduction in the amount of intragenerational redistribution in Canadian society.

Osberg argues that this is exactly what happened in the 1990s. The federal government's decision to eliminate its deficit led to an almost unprecedented reduction in the share of federal government spending in GDP. Although Ottawa characterizes this reduction as having brought federal spending to its lowest level in 50 years, Osberg notes that you have to go back 70 years, all the way to the 1930s, to see federal spending at such a low level over such a sustained period. The consequences for the distribution of income in Canada must have been as dramatic as the decline itself and the brunt of the change will have been borne

by people lower down the income scale. Osberg concludes that "the real issue in the debt debate is the implication for equity, within generations, of how we choose to deal with debt." In his view, "it is misleading in the extreme to portray the debt issue as a conflict between generations."

In his commentary on the conference, *Jack Mintz* makes a number of points on various aspects of the debt debate and then focuses on whether the debt war is over.

On whether we should care about government debt, Mintz is emphatic: we definitely should. The Ricardian equivalence doctrine, under which private actions offset any effects of government debt in the capital markets, strikes him as "extreme." People are neither infinitely-lived nor so thoroughly altruistic that, confronted with new government debt, their reaction is to save in order to prepare for the consequent increase in the taxes of all members of all future generations. Mintz echoes both David Johnson and Bev Dahlby when he writes: "Debt therefore does matter, and it could well reduce economic growth."

That said, the question of what the optimal level of debt might be is not easy. The optimal rate need not be zero. Governments do at times make long-lived investments that will benefit future generations and it is therefore not unreasonable to ask future generations to help finance them. On the other hand, if governments were as far-seeing as they should be, then Ricardian equivalence would probably hold, and the evidence suggests it does not. If governments *aren't* far-seeing, they will often be inclined to borrow whether or not the funds will be used to acquire long-lived public assets, and that may do considerable harm to future generations. A useful operating assumption therefore is that democratic governments may build up more than an optimal amount of debt.

On the practical question of what policy makers should do about the debt, Mintz argues that this conference, like others before it, has provided little help. In deciding whether to borrow in order to finance a specific public investment, policy makers will want to know whether and by how much the investment's rate of return exceeds the rate of interest on the debt incurred to finance it. Theory tells them that if the return is greater than the rate of interest, the use of debt is justified. Unfortunately, "we do not know very much about what aspects of public expenditure are truly investments rather than consumption. Nor do we know, except in limited cases, the actual rates of return on government investments." There is, to be sure, sketchy evidence on the rate of return to different kinds of education and to some forms of infrastructure investment. And cross-country studies suggest that too large a public sector may reduce the rate of economic growth. But in most cases we simply do not have the information we need in order to make an informed decision about whether debt finance is justified or not.

Mintz' final comment concerns what he regards as the coming fiscal crisis associated with the aging of the baby boomers. He accepts Robin Boadway's arguments about intergenerational fairness. If a generation is substantially poorer or faces substantially greater dangers than successor generations are likely to, then it may be justified in passing along tax burdens to future generations by financing many of its spending needs with debt. The generation that lived through the Great Depression and World War II may have been justified in spreading its burdens, but Mintz argues that "the buildup of Canada's debt since 1975 is less excusable. No war or special shocks can explain why Canada's indebtedness increased so much." Even so, the high rates of taxation resulting from the debt finance of the 1970s, 1980s and 1990s have imposed a heavy burden on the current generation of taxpayers.

In Mintz' view, the crucial question for the next few decades is how the aging and retirement of the baby boomers will impact on the tax rates of the generations that will be asked to finance the baby boomers' health care and retirement incomes. Bill Robson's paper goes some way in this direction, but the "missing paper" in this conference would have provided detailed estimates of the fiscal and economic consequences of the imminent rapid aging of Canada's population. In its absence, recent work from the OECD suggests that the demographic change the country is about to live through will erode its fiscal position – through increased expenditures and reduced taxes – by fully 8 percent of GDP. With taxes currently running around 43 percent of GDP, if the government sector as a whole continues to run balanced budgets, that means average tax rates may eventually have to rise to above 50 percent of GDP. The consequences for economic growth and for emigration from Canada would likely be very serious. On the other hand, Mintz emphasizes that there is still time to act. Reducing our combined (federal, provincial and municipal) government debt from 75 percent of GDP to 25 percent would eventually save five percentage points of GDP in interest payments every year, savings that could be put toward public priorities. Although Jack Mintz' main message is that "real numbers are needed if we are, first, to understand current and future tax burdens and then to act on our understanding," his final comment is that "on balance, given recent analyses of demographic effects provided by the OECD and others, I believe the debt war is far from over."

What We Learned

Having summarized the eight papers and the discussants' comments, as well as the two rapporteurs' thoughts, we now lay out the main lessons we ourselves take from the collection of papers.

Total government debt is much larger than the formal government debt. William Robson's approach to calculating our governments' debts, which is to figure out how much the federal and provincial governments are likely to spend and earn in taxes over the next 50 years, is a daunting task laden with intellectual risks. Still, we are persuaded both by his basic message and approach and by his estimate of $1.1 trillion, at least as a ball-park value. The main difference between the basic debt figures of about $760 billion for the three levels of government for 2001, the year for which he undertook his study, and his estimate of $1.1 trillion comes from the unfunded liabilities that our governments have incurred by their implicit promise to maintain the current level of per capita spending on health care and other social programs. There is no reason to suppose the situation is greatly different today. If these commitments are to be honoured, either taxes will have to rise or governments will have to return to deficit financing. Alternatively, if taxes are to remain at their current per capita level and governments refuse to increase their borrowing, these commitments simply cannot be honoured. The conclusion we draw from Robson's paper is that the debt is still big and that a fiscal crunch is coming as the baby boomers begin to impose larger and larger burdens on the health-care and retirement income systems. The case for trying to get our governments' balance sheets in order before the crunch rather than during or after it is compelling.

The formal debt is not all that matters. We should also keep in mind the total amount of government indebtedness. The main point of Robin Boadway's paper is that the amount of marketable government debt (i.e., outstanding bonds) is only part of the picture. The entire range of government activities, whether taxation, expenditure or regulation, can move resources from one generation to another. Canadian economists need to dig harder to find out exactly which way the money is flowing and Canadian politicians need to keep in mind all the flows between generations before changing any of them. Still, just because the formal debt is not the only way of effecting intergenerational transfers does not mean the formal debt does not count. We should not simply assume that our governments' non-debt activities fully offset the debt's transfer of resources from future generations to current taxpayers. If essentially the same political coalitions decide most policy, then all transfers may move in the same direction. To be blunt, if we baby boomers were able to tilt debt policy in our favour, we may have been able to tilt *all* intergenerational policies in our favour, though until all the data are in this can only be an hypothesis.

Although economic conditions can change quickly, policy is often slow to respond. In their paper, Ron Kneebone and Jennifer Chung argue that Canada's debt problems of the 1980s and 1990s were the result of a time bomb that was set ticking in the 1970s when growing structural deficits were camouflaged by

the very low interest rates and relatively high economic growth rates of that era. The combination of the two meant that the debt-to-GDP ratio remained stable or declined even as cyclically-adjusted budget balances worsened. When in the early 1980s interest rates spiked and growth rates fell the fiscal turnaround was swift and brutal. Although at the federal level the Mulroney government eliminated the structural deficit by the early 1990s, it was not until the mid-1990s that the Chrétien Liberals finally ran a surplus. In recent years interest rates have been lower and growth rates higher than in the 1980s, but governments that remain heavily indebted must be constantly aware that they are vulnerable to changes in these key economic variables. Governments need to watch their structural balances very closely, and prevent them from getting out of control. In view of the last three decades' experience, prudence is best.

Government debt is costly and harms future generations. The papers by David Johnson and Bev Dahlby persuade us that government debt *does* matter. Johnson convinces us that Ricardian equivalence does not hold, and that government deficits in an open economy like Canada lead to a reduction in the share of domestically produced output that Canadians receive as income. Johnson estimates the cost of this effect at about $3,600 a year for a family of four. Dahlby's paper shows that even if Ricardian equivalence does hold, there may still be a decline in the rate of economic growth. The reason is that a higher debt means higher interest payments by governments. The higher taxation this requires imposes efficiency costs on the economy, including a lower rate of growth. Dahlby estimates the cost at about 15 percent of the amount borrowed, which means that any public project financed with borrowed funds should bring a return of 15 percent if it is to be worth the resources invested in it. Another way of looking at his calculation is that debt reduction brings a return in economic efficiency equal to 15 cents on the dollar. There may not be many more-productive investments open to governments. Moreover, 15 percent may understate the true cost of public borrowing. In Dahlby's model, higher taxes reduce the rate of economic growth by discouraging saving and reducing the future stock of capital. But in the real world they may also reduce the future stock of human capital by discouraging Canadians from investing in their own knowledge and skills.

The "optimal" level of government debt may have less to do with efficiency and macroeconomic stability than with intergenerational equity. Although he did not comment directly on David Johnson's and Bev Dahlby's calculations of the efficiency costs of public borrowing, William Scarth argues that considerations of fairness (or "equity") may be at least as important in any discussion of optimal debt policy. Scarth develops a simple model of economic growth in which the aging of the baby boomers reduces average future living standards, not in absolute terms but in comparison to where growth would take them had there been no boom, and he tries to calculate how large a reduction in government

debt would be needed now to help share this burden between generations. Such calculations are always sensitive to the assumptions that lie behind them, but Scarth's bottom line that the federal debt-to-GDP ratio needs to be reduced to roughly 25 percent of GDP seems plausible to us.

The recent move toward greater use of long-term debt instruments is a reasonable strategy for reducing the chances of unpleasant surprises in debt-servicing costs. This is one of the main points suggested by David Bolder and Clifton Lee-Sing's paper, and it seems right to us. Short-term interest rates can be volatile, and avoiding this volatility in the budget makes for easier fiscal planning. In an era of generally low interest rates it makes sense to lock in the benefits of such rates.

Formal rules are neither necessary nor sufficient for making significant headway on the deficit or debt. We agree completely with Don Drummond's main point that a credible political commitment is the fundamental requirement for deficit or debt reduction. The federal government's inability in the early 1990s to eliminate its deficit when it had fiscal rules and its subsequent balancing of its budget after these rules had been dropped show that rules are neither necessary nor sufficient. On the other hand, we agree with Paul Boothe that simple, well-crafted rules that are easy for the public to understand can be very useful to any government that wants to say "no" to interest groups seeking increased spending. What now seems to be the operative rule in Ottawa and several provincial capitals – "thou shalt always balance the budget" – is very easy to understand and does imply a rule for the debt ("so long as the economy grows the debt will decline") but elaboration of a more precise rule for the debt, one that specified a target for either the debt-to-GDP ratio or the debt-per-person ratio is made difficult, as Drummond says, by economists' inability to agree on what the best level for the debt would be.

The aging of Canada's population will put greater stress on the fiscal positions of Canadian governments. Continued debt reduction for the next several years will help ease this coming fiscal crisis. A fiscal crunch is coming in Canada. William Robson's calculations suggest that Canadian governments' unfunded liabilities amount to $300 billion, this on top of contracted debt of almost $800 billion. More-detailed calculations might well put the number higher. (They might also put it lower, of course, but upside risk is the main worry here.) In this case, an unfunded liability means an expenditure for which there is no corresponding tax revenue without an increase in tax rates. In his comments, Jack Mintz cites OECD estimates that coming demographic changes will cause a deterioration in Canada's fiscal position of fully eight percentage points of GDP. With tax revenues currently running at about 43 percent of GDP, meeting those perceived expenditure obligations could take average tax rates above 50 percent of GDP, which would be bound to have harmful effects on investment, saving and

economic growth. One way for governments to ease the fiscal squeeze would be to run budget surpluses over the next few years in order to reduce government interest payments and thus open up room for future expenditure needs. Another way would be to reduce current expenditures on all but truly essential public services so that current generations of taxpayers might also benefit from continuing tax reductions.

The baby-boom generation has some tough questions to ask itself as it enters the final few years of its working life. Believing as we do that public borrowing has important efficiency costs we were frankly surprised by how much of the discussion at the conference and in these papers had to do with fairness – something economists are by no means uniquely qualified to judge. There did seem to be widespread agreement that generations which through no fault of their own suffer grave misfortune should feel free to share their burden with future generations by financing at least part of their public expenditures by borrowing. The example of the generation that lived through the Great Depression and World War II – the generation that included the fathers and mothers of many people attending the conference – was mentioned in several papers and comments. Most commentators seemed to think that people in this generation had been entitled to share their burdens with their children and grandchildren by using debt finance more than governments normally should. But there was much less agreement about whether the generation that was politically decisive in the 1970s and 1980s should have felt itself entitled to share the burdens of stagflation and recession with its children and grandchildren. The recessions of 1980–82 and 1990–91 were unpleasant to live through, but in retrospect they were not nearly as severe as the Great Depression. By the same token the mental strain of the Cold War undoubtedly took its toll but hardly compares with the trauma of 1939–45. Moreover, now that the baby boomers are in their fifties, it becomes clear that despite the slower economic growth of the last third of the twentieth century compared to the first postwar decades, they have enjoyed a higher standard of living, by far, than all previous Canadian generations. Does this luckiest of generations want its legacy to its children to be severe indebtedness and high taxes, or does it wish to be fair to those who follow it and to leave them fiscal circumstances at least as favourable as it inherited?

Is the debt war over? No, it is not.

Note

1. The deficit is the difference between the government's revenues and its expenditures in a given year, while the debt is just the accumulated deficit. If a government runs a deficit, it adds to its debt. If it runs a surplus, it reduces its debt: the extra revenues can be used to retire bonds when they come due.

In fact, the numbers quoted are only approximately right. The numbers provided are the latest "consolidated government finance" data from Statistics Canada as of January 18, 2004. But the federal debt number ($527 billion) is as of March 31, 2003, the close of Ottawa's most recent complete fiscal year. Similarly, because it takes time for Statistics Canada to compile the relevant data the provincial-territorial number ($249 billion) is as of March 31, 2002, while the municipal government number ($10 billion) is as of Dec. 31, 2001.

Because the conference on which this book is based was held in October, 2002, any references to the "current value" of any fiscal figure are to values that were current at that time. This is particularly a problem for William Robson's paper, which attempts a detailed, customized tally of published values of government debt. Rather than ask Robson to update his remarkable accounting effort to take changing numbers into account, we have published his paper containing the numbers he presented at the conference. He and the other authors are absolved from any responsibility for publication delays, which are entirely the editors' fault.